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H-FR1 H-CDR1 H-FR2 H-CDR2  
MQVQLQSGPELEKPGASVKLSCKASGYSFT GYTMN WVKQSHGKSLEWIG LITPYNGASSYNQKFRG

H-FR3 H-FR3 H-CDR3 H-FR4  
KATLTVDKSSSTA YMDLLSLTSEDSAVYFCAR GGYDGRGFDY WGQGTTVTVSS

LINKER L-FR1 L-CDR1 L-FR2  
GVGGSGGGSGGGGS DIELTQSPAISASPGKVTMTCSASSSVSYMH WYQQKSGTSPKRWIY

L-CDR2 L-FR3 L-CDR3 L-FR4  
DTSKLAS GVPGRFSGSGSGNSYSLTISVEAEDDATYYC QQWSGYPLT FGAGTKLEIK

(57) Abstract: Mesothelin is a differentiation antigen present on the surface of ovarian cancers, mesotheliomas and several other types of human cancers. Because among normal tissues, mesothelin is only present on mesothelial cells, it represents a good target for antibody mediated delivery of cytotoxic agents. The present invention is directed to anti-mesothelin antibodies, including Fv molecules with particularly high affinity for mesothelin, and immunoconjugates employing them. Also described are diagnostic and therapeutic methods using the antibodies. The anti-mesothelin antibodies are well-suited for the diagnosis and treatment of cancers of the ovary, stomach, squamous cells, mesotheliomas and other malignant cells expressing mesothelin.

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